

## VI. ABSTRACT

A process for recycling or decomposing waste plastic where such waste plastic is decomposed in a diluent such as hot oil through actions involving free radical precursor, such as polyvinyl chloride or polyurethane, is achieved at low temperature. The thermal decomposition (or pyrolysis) reaction is for about 1 hour at 375°C, and useable products, such as distillate, coke, and oil are recovered. Additionally the diluent may be recycled within the process.